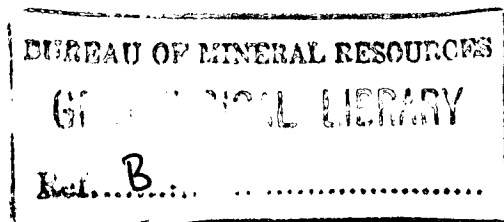


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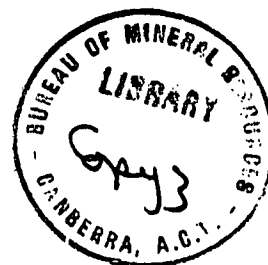
COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS



RECORD No. 1963/16



ARCADIA (AAO No. 7) WELL LOGGING, QLD 1957

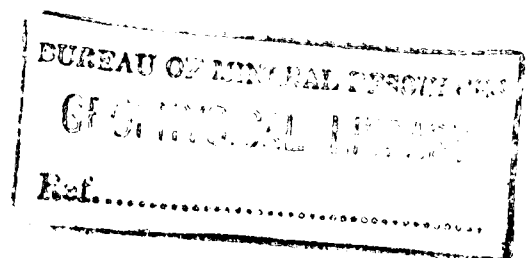
by

F. Jewell

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Plate 2. Electric log of AAO No. 7 well, Arcadia	(G55/B6-9)

## SUMMARY

AAO No. 7 well was drilled to 3280 ft on the Arcadia Anticline in the Bowen Basin to test the petroleum prospects of the Permian sediments. The electric log of the well was helpful in determining the upper extremities of the Permian formations and in outlining the permeable beds, but the low resistivity of the permeable beds gave no indication of any petroleum content.

## 1. INTRODUCTION

Arcadia AAO No. 7 well located about 40 miles north-north-east of Injune, was logged in July 1957 for Associated Australian Oilfields N.L. (AAO). A Widco single-point resistance and self-potential logger was used to log the well to its total depth of 3280 feet.

The well is sited one mile east of the axis of the Arcadia Anticline in the Bowen Basin, at latitude  $25^{\circ}17'54''\text{S}$ , longitude  $148^{\circ}47'43''\text{E}$ . The object was to test the petroleum prospects of the Permian formations following the gas-show struck by a previous well, Arcadia (Oil Search Ltd), in 1936. AAO No. 7 was abandoned as a dry hole.

## 2. GEOLOGY

The Bowen Basin is a deep narrow syncline with a large thickness of Permo-Carboniferous and Triassic sediments. The stratigraphic sequence in this southern part of the Basin was expected to be:

Permo-Carboniferous	{	Bandanna Formation	(coal-measure shale)
	{	Mantuan Downs Formation	(calcareous sandstone)
	{	Catherine Sandstone	(mainly terrestrial sandstone)
	{	Ingelara Beds	(shale and sandstone)
	{	Aldebaran Sandstone	(freshwater sandstone)
	{	Cattle Creek Formation	(shale)
	{	Staircase Sandstone	(sandstone)

According to the tentative stratigraphic correlation by AAO, the Mantuan Downs Formation was not encountered and the sequence was as follows (Geological Survey of Queensland, 1960):

0 - 845 ft	Upper Bandanna Formation
845 - 1160 ft	Lower Bandanna Formation
1160 - 1480 ft	Catherine Sandstone
1480 - 2200 ft	Ingelara Beds
2200 - 2290 ft	'Transition Beds'
2290 - 2760 ft	Cattle Creek Formation
2760 - 3280 ft	Staircase Sandstone

### 3. INTERPRETATION OF LOG

Character changes in the log at 1165 ft and 1482 ft correspond to the Bandanna Formation/Catherine Sandstone contact and the Catherine Sandstone/Ingelara Beds contact respectively. The shale section between 1482 ft and 2758 ft includes the Ingelara Beds and the Cattle Creek Formation.

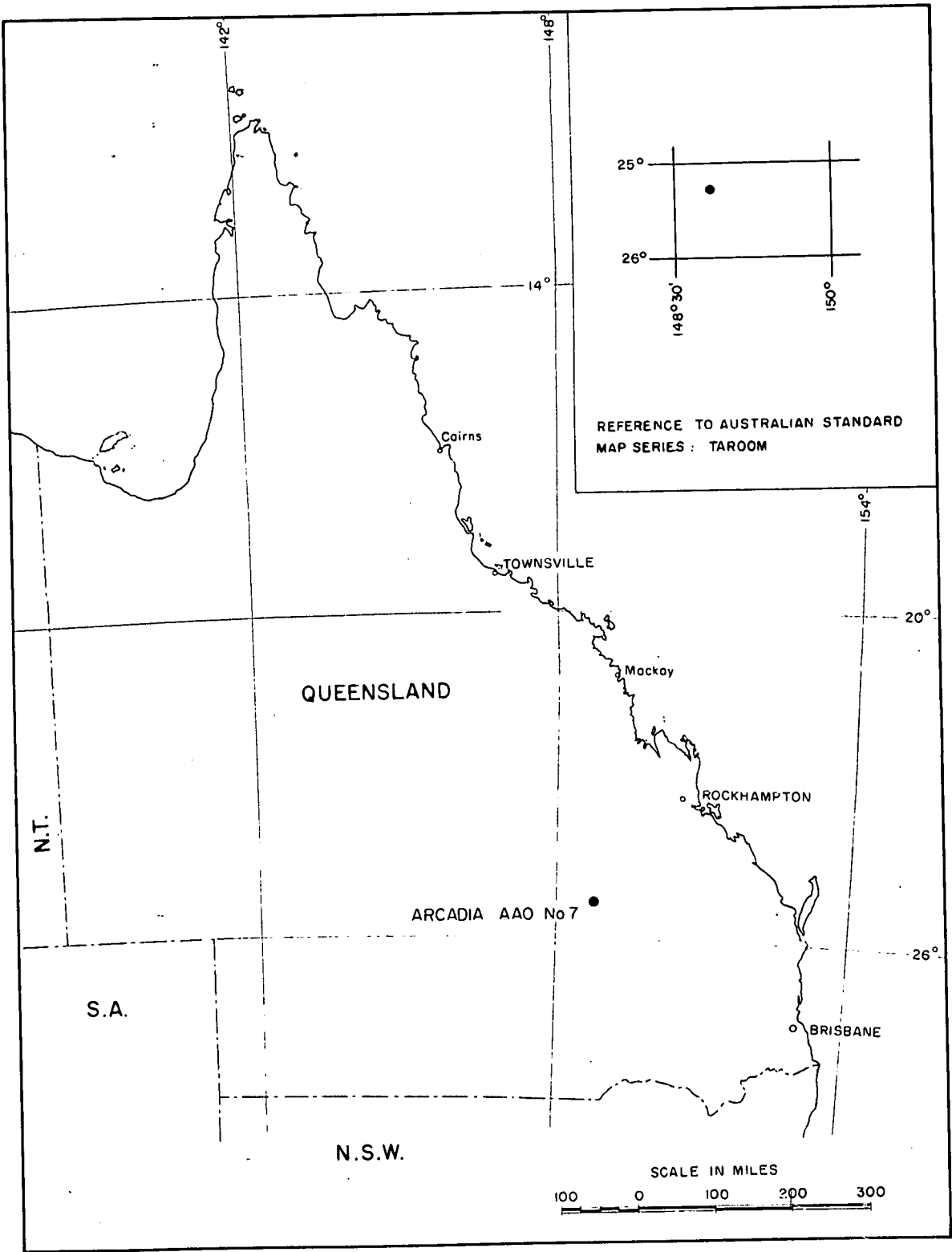
Except for occasional thin beds in the Upper Bandanna Formation, only the staircase Sandstone, 2758 ft to total depth, shows any evidence of high permeability. However, the formation resistance is low except for the bed at 2900 to 2912 ft and those below 3220 ft. These resistant beds show poorly developed self-potentials, indicating that they are tight. The high resistance of the beds is therefore probably due to lack of porosity rather than to any petroleum content.

### 4. CONCLUSIONS

The electric log is of assistance in distinguishing the upper extremities of the formations and in outlining the permeable zones in the Staircase Sandstone. The low resistance of the permeable zones indicates that these zones probably do not contain petroleum.

### 5. REFERENCE

- |                                    |      |   |
|------------------------------------|------|---|
| GEOLOGICAL SURVEY OF<br>QUEENSLAND | 1960 | Occurrence of petroleum and natural<br>gas in Queensland. <u>Publ. geol. Surv.</u><br><u>Qld No. 299.</u> |
|------------------------------------|------|---|



ARCADIA (AAO No7) WELL LOGGING  
QUEENSLAND 1957  
LOCALITY MAP

ARCADIA AAO 7

COMPANY ASSOC. AUST. OILFIELDS N.L.		COORDINATES			
AREA ARCADIA		E 148°47'43"			
WELL AAO No 7		S 25°17'54"			
STATE Queensland		ELEVATION 1222' ASL			
		N.F.			
		K.B.			
		G.L.			
Date	Run No. 1	Run No. 2	MUD	Run No. 1	Run No. 2
First Reading	14-7-1957		Nature		
Last Reading	414		Density		
Footage Logged	3275		Viscosity	@ °F	@ °F
Bottom (Driller)	2861		Resistivity	5.29 @ 72 °F	@ °F
Casing (From Log)	3280		Res. BHT	@ °F	@ °F
Casing (Driller)			pH		
Casing Size	416		Circ. Temp.		
Bit Size			B.H. Temp.		
Bit Size:	7 7/8" to 2582'				
	25 3/4" to 2736'				
	28" to bottom				
			Logged by	N. Jackson	
			Witnessed by		
REMARKS Depth relative to rotary table. 5 ft above ground level					
Stratigraphy by AAO					

